

Lesson #1

8/28/07

Topic: Course Introduction

Objectives: (After this class I will be able to)

1. Go through all classroom procedures without any instruction.
2. Know how to sign up for tutoring when needed.

Warm Up: Brainstorm what comes to your mind when you think about PHYSICS!

Assignment: Get parent signature on syllabus acknowledgement form and make a reply post on bhsphysics wiki.

Equation card

- Do not lose this card!!! It will help you throughout the entire year!
- Write on the card:
- Your Name
- Your Book #
- Your Period #

[illegible]

Wikispace info card

- Write on the card:
- www.wikispaces.com
- A screen name (so no one will know you)
- A password (that you wont forget)
- <http://bhsphysics.wikispaces.com>

www.wikispaces.com

Last name

SN: Carrots88 (has to be at least 8 characters)

Pass: Jimbo7 (has to be at least 6 characters)

<http://bhsphysics.wikispaces.com>

Back of wiki card

www.physicspp.com

Click on Student Center, then Online Student Edition to access online textbook.

User Name: PHYSICS5

Password: ta42kapr

- ☐ This website will be used often for activities, labs, information, and assignments.
- ☐ Anyone who forgets to take their text home or does not wish to, can access the entire book from this website on their home computer.

Lesson #2

Topic: Math Review

Objectives: (After this class I will be able to)

1. Describe why standard measurement units are needed.
2. State the basic units used in this course.
3. Practice the math skills necessary for this class.

Project: How big is your book?

Assignment: Math Review Sheet #1 (due Thursday)
and #2 (due Friday)

How big is your book?

■ Length =

■ Width =

■ Thickness =

■ Surface area =

■ Volume =

■ Are these units ok?

■ What should the units be?

■ Which of these units are the same? Different?

Why should I care about measurement or units?

■ The Peanut Prank



The Peanut Prank



Evil student
plotting prank
and taking
measurements

- You consider yourself a bit of a prankster, and want to have fun with one of your buddies. You consider filling their locker up completely from top to bottom with packaging peanuts, so that the next time they open their locker... WOOSH.. Wave of Styrofoam!

The Peanut Prank

- The price of packaging peanuts is \$2 for every 10 cubic centimeters.
- What would it cost you to pull this prank?
- Explain **everything** you do to calculate this cost neatly on a separate sheet of paper.
- Include a paragraph of why you feel this prank is worthwhile, or just plain not worth it.



Units you need to know

- | | |
|---------------|-----------------------------|
| Meter (m) | - Standard unit of distance |
| Kilogram (kg) | - Standard unit of mass |
| Second (s) | - Standard unit of time |

Milli – $\times 10^{-3}$ of the central unit

ex. 1 millisecond = 1×10^{-3} seconds

Centi – $\times 10^{-2}$ of the central unit

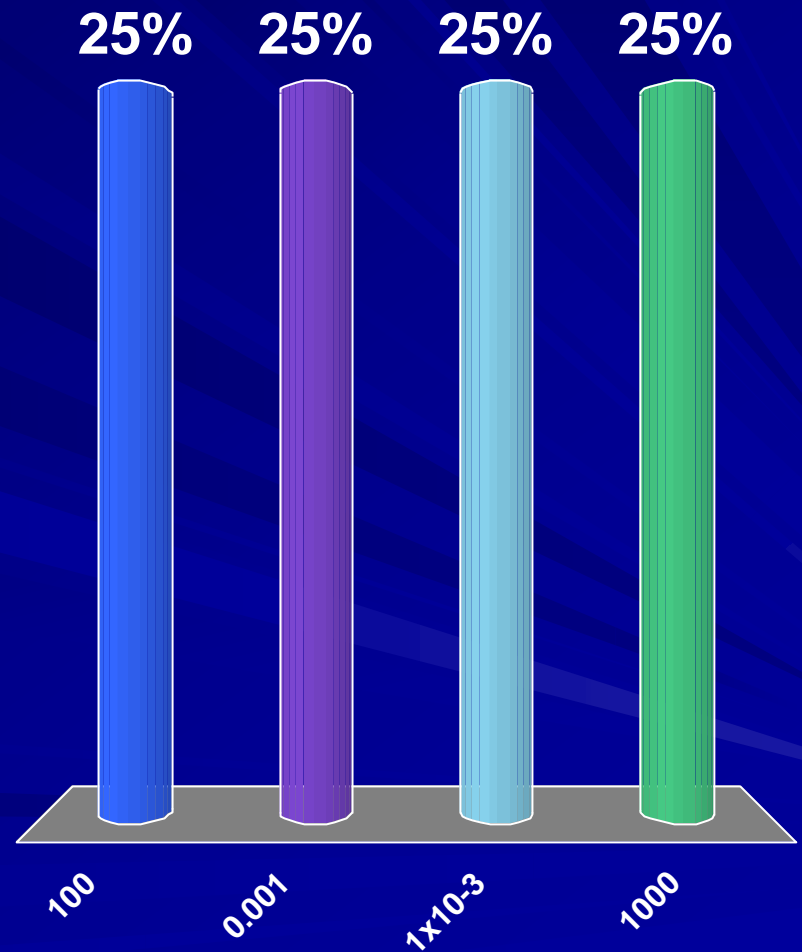
ex. 1 centimeter = 1×10^{-2} meters

Kilo – $\times 10^3$ of the central unit

ex. 1 kilogram = 1×10^3 grams

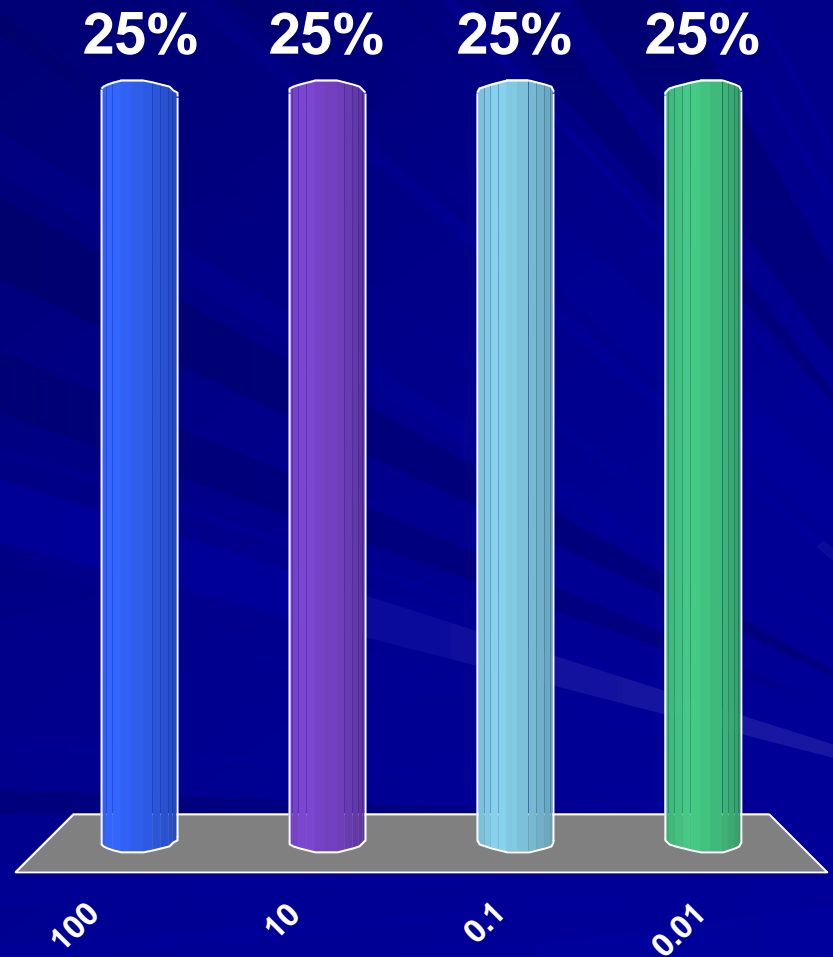
There are ____ meters in a kilometer.

1. 100
2. .001
3. 1×10^{-3}
4. 1000



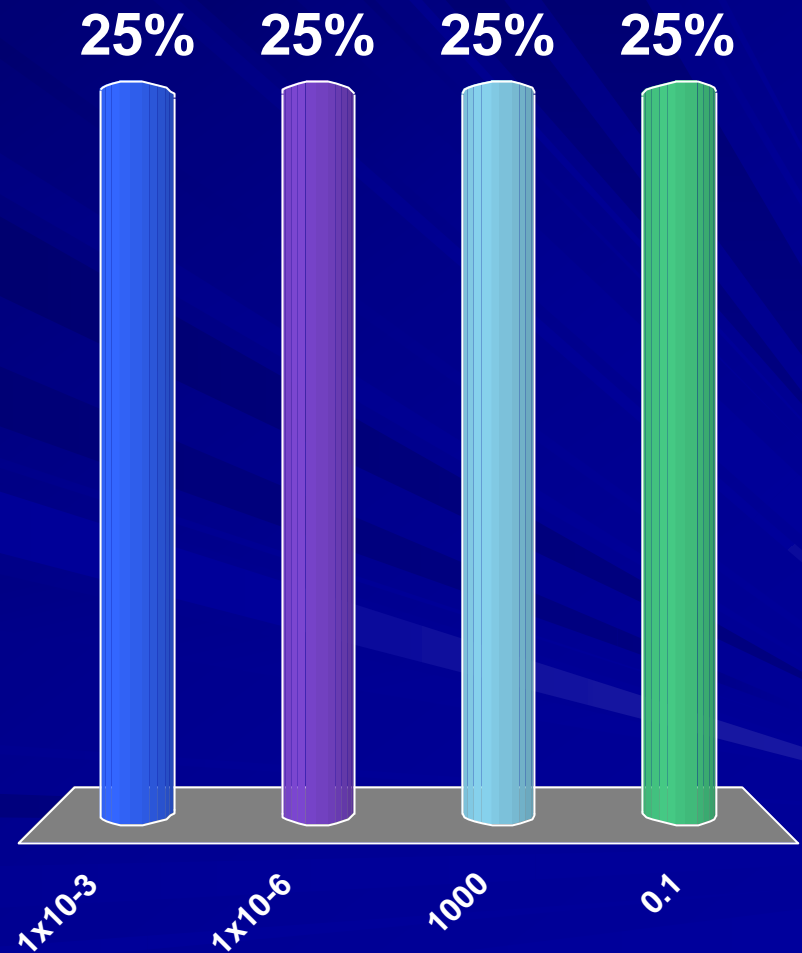
There are ____ m in a centimeter.

1. 100
2. 10
3. .1
4. .01



There are ____ seconds in a millisecond.

1. 1×10^{-3}
2. 1×10^{-6}
3. 1000
4. .1



Lesson #3

Topic: Describing Motion

Objectives:

1. Describe the motion of an object.

Project: What is the speed of the car?

Assignment: Study definitions of all the terms given in class today, quiz Wednesday!

Physics is describing motion.

Class assignment: Look up and define the following terms that allow us to describe motion...

- | | |
|--------------|-----------------|
| 1. Ratio | 6. Direction |
| 2. Rate | 7. Distance |
| 3. Vector | 8. Displacement |
| 4. Scalar | 9. Speed |
| 5. Magnitude | 10. Velocity |

1. **Ratio:** a comparison of two different things that gives us useful information

Example: Circumference / diameter = π

2. **Rate:** A ratio that compares a change in some quantity to a change in time

Examples: miles / hour, dollars / hour, gallons / minute

3. **Magnitude:** The quantity of something; How big something is

Examples: 78 kg, \$27, 105 m, 2.33 s, 2300 N

4. **Direction:** Is given to a magnitude to indicate a descriptive motion within some coordinate system

Examples: up, West, 22° above horizontal, or simply 202

5. **Scalar:** Magnitude of something without any direction

Examples: Distance, Mass, Time, Speed, Energy

6. **Vector:** Magnitude of something with direction

Examples: Displacement, Force, Velocity, Acceleration

7. **Distance:** How far Ex. 28 meters

8. **Displacement:** How far with direction

Example: 28 miles at 12° South of East

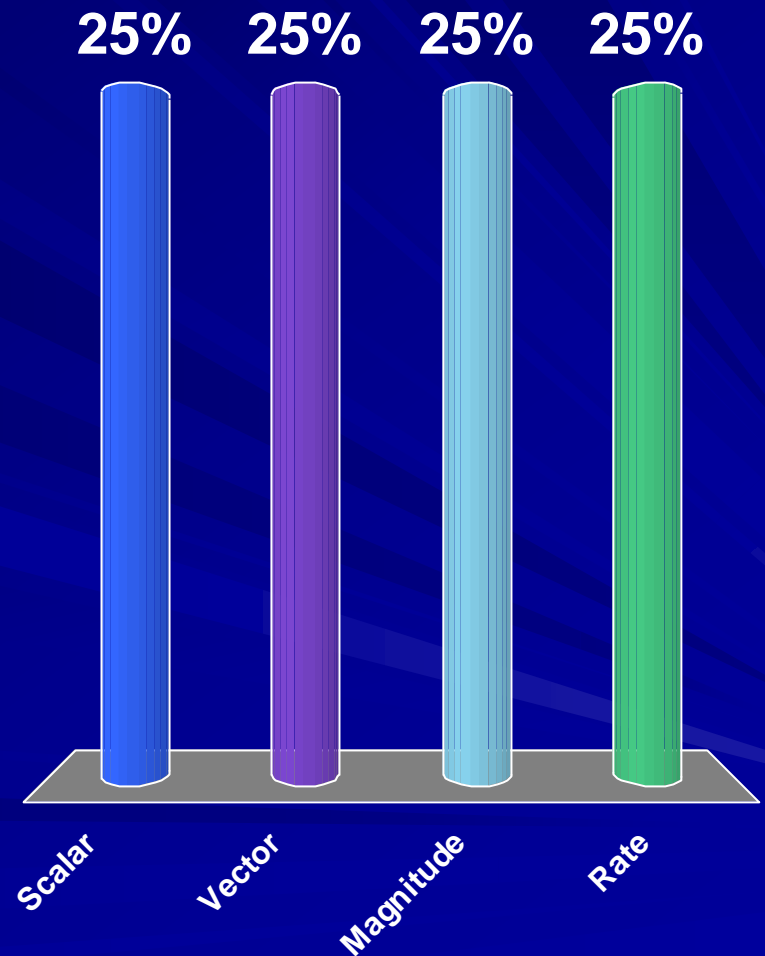
9. **Speed:** How fast without direction Ex. 45 mph

10. **Velocity:** Speed with direction

Example: 24 m/s at 22° (counterclockwise from positive x axis)

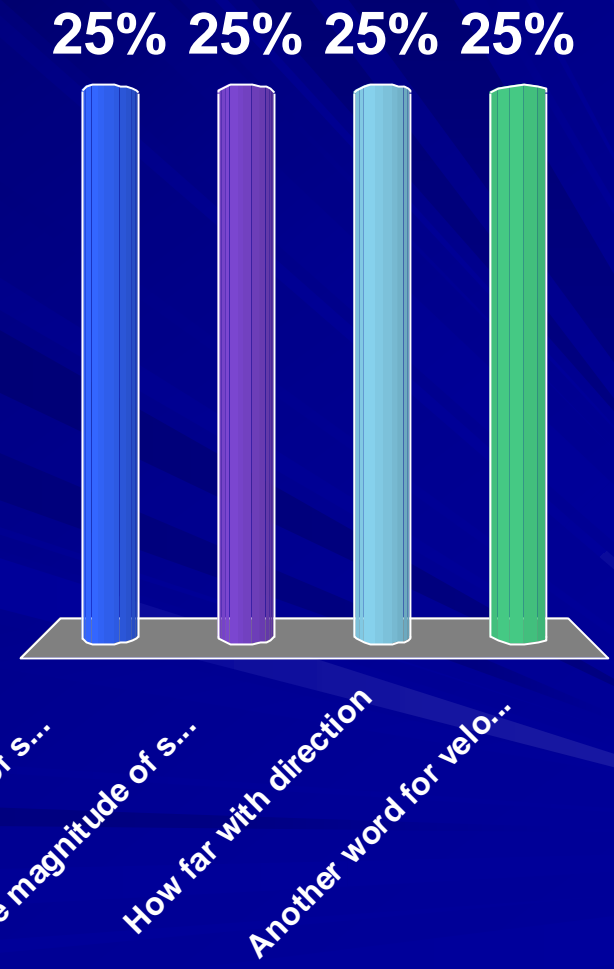
How big something is; the quantity of something...

1. Scalar
2. Vector
3. Magnitude
4. Rate



Vector

1. The magnitude of something without direction
2. The magnitude of something with direction
3. How far with direction
4. Another word for velocity



Velocity

1. Distance divided by time
2. Displacement divided by time
3. A scalar quantity
4. A vector quantity
5. 1&4
6. 2&4

